

Amendments to the Claims

The following listing of claims replaces a prior versions and listings of claims in this application:

Listing of claims:

1-19. (Cancelled).

20. (Currently amended) A ~~package for protecting a~~ fluid sensor package comprising a ~~flexural resonator, the package comprising:~~

a ~~flexural~~ tuning fork resonator on a platform, the ~~flexural tuning fork resonator comprising tines, each tine having one or more exposed sensing surfaces in spaced relationship to the platform so that the exposed sensing surface can displace a fluid in contact therewith to determine one or more characteristics of the fluid, each~~ tine further comprising an electrode, and a piezoelectric material selected from the group consisting of quartz and lithium niobate, wherein the electrodes are positioned to apply electrical fields to the piezoelectric materials in the respective tines to move said surfaces of the tines relative to the platform to displace a fluid in contact with the tines,

an application specific integrated circuit (ASIC) on the platform, the ASIC being in electrical communication with the ~~flexural resonator~~ electrode of each tine for providing stimulus to the flexural tuning fork resonator and for receiving a response signal from the flexural tuning fork resonator, the ASIC being operable to determine one or more characteristics of the fluid from the response signal, and

a secondary component ~~positioned independently on the platform and spaced~~ from the ASIC ~~on the platform~~, the secondary component being selected from the group consisting of a temperature sensor, a field programmable gate array, a calibration unit, a conductive path, a resistor, a capacitor, an amplifier, a filter, and combinations of two or more thereof, ~~the secondary component being in optional electrical communication with the ASIC.~~

21. (Currently amended) The fluid sensor package of claim 20, further comprising a housing spaced from the ~~exposed sensing surface~~ tines.

22. (Currently amended) The fluid sensor package of claim 21 wherein the housing includes a plurality of walls that substantially surround the flexural tuning fork resonator while maintaining exposure of ~~the exposed sensing surface~~ said surfaces of the tines to the fluid.

23. (Currently amended) The fluid sensor package of claim 20 wherein the ASIC comprises a temperature sensor, or wherein the secondary component comprises a temperature sensor.

24. (Currently amended) The fluid sensor package of claim 20 further comprising a protective layer covering a portion of the flexural tuning fork resonator and a portion of the platform ~~while maintaining the exposed sensing surface such that the exposed sensing surface can displace the fluid in contact therewith.~~

25. (Currently amended) The fluid sensor package of claim 24 wherein the protective layer covers, partially or completely, the ASIC or the secondary component.

26. (Currently amended) The fluid sensor package of claim 20 wherein the flexural tuning fork resonator is capable of operating at temperatures between -60 °C and 300 °C.

27. (Currently amended) The fluid sensor package of ~~claim 26~~ claim 20 wherein the flexural tuning fork resonator is capable of operating at temperatures between -40 °C and 170 °C.

28. (Currently amended) The fluid sensor package of claim 20 wherein the flexural tuning fork resonator on the platform has a length ~~or width~~ smaller than 5 mm.

29. (Currently amended) The fluid sensor package of claim 28 wherein the flexural tuning fork resonator on the platform has a length ~~or width~~ smaller than 1 mm.

30. (Currently amended) The fluid sensor package of claim 20 wherein the package has a volume of about less than 15 cm³.

31. (Currently amended) The fluid sensor package of claim 30 wherein the package has a volume of about less than about 10 cm³.

32. (Currently amended) The fluid sensor package of claim 20 wherein the package has a footprint of less than about 40 cm².

33. (Currently amended) The fluid sensor package of claim 32, wherein the package has a footprint of about less than about 20 cm².

34. (Currently amended) The fluid sensor package of claim 20 wherein ~~the flexural resonator is selected from tuning forks, cantilevers, bimorphs, or unimorphs, membrane resonators, or torsional resonators~~ ASIC is operable to determine a viscosity of the fluid and to determine a density of the fluid independent of said viscosity using the response signal from the tuning fork resonator.

35. (Currently amended) The fluid sensor package of claim 20 wherein ~~[[in]] the package is adapted for use in engines, automobiles, heavy machinery, military equipment, airplane parts, oil drilling, exploration and production well logging, oil refining, pipeline and quality control equipment, marine transportation, or sub-sea exploration and aerospace related equipment~~ installed in apparatus selected from the group consisting of an engine, an automobile, an airplane, production well logging equipment, and a pipeline.

36. (Currently amended) The fluid sensor package of claim 20 further comprising a Faraday cage positioned to envelop the tuning fork resonator.

37. (Currently amended) The fluid sensor package of claim 20 wherein the package is ~~adapted for use in~~ installed in a system selected from the group consisting of an engine, a transmission, a transfer case, a differential, a brake system, a steering system, an antifreeze system, a heating and cooling system, and a washer system.

38. (Currently amended) The fluid sensor package of claim 20 wherein the package is adapted for use in lubricants, brake fluids, steering fluids, antifreeze fluids, refrigerant fluids, and washer fluids.

39. (Currently amended) The fluid sensor package of claim 20 wherein ~~the flexural resonator is a tuning fork~~ the secondary component is in electrical communication with the ASIC.

40. (Cancelled).